TRAFFIC CENSUS FOR NON-URBAN ROADS

(Second Revision)

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TRAFFIC CENSUS FOR NON-URBAN ROADS

1. INTRODUCTION

This standard was originally published in 1960. Thereafter the standard was revised in the year 1972. Since then, significant changes have taken place in the Country across socio-economic conditions, vehicle types and technologies, traffic counting technologies, data communication, storage and retrieval technologies, institutional arrangements associated with road development, operation and maintenance etc. This necessitated adoption of suitable amendments to approach and methodologies for undertaking traffic census across road segments which are both technologically and scientifically sound and operationally convenient to execute in line with prevailing conditions. The task of revision of this standard was taken up by the Transport Planning and Traffic Engineering Committee (H-1) during the tenure 2018-20. The revised draft was prepared by Shri Venkata Subbarao Chunduru which was deliberated in various meetings of H-1 Committee and was finalized in its meeting held on 29.05.2020.

The composition of H-1 Committee is given below:

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The revised draft document was placed before the Highways Specifications and Standards Committee (HSS) in its meeting held on 12.09.2020 and continued on 19.09.2020 & 03.10.2020. The HSS Committee decided that the Convenor, H-1 Committee will modify the document based on written and verbal comments offered during the meeting and submit the final document to IRC for placing before the meetings of Executive Committee (EC) and Council. The EC in its meeting held on 18.02.2021 approved the draft document for placing before the Council. The 221st Mid-Term Council in its meeting held on 20th – 21st February, 2021 considered and approved the draft revision of IRC:9 "Traffic Census for Non-Urban Roads" for printing.

2. PURPOSE

Traffic Census is the baseline of Transportation Engineering and forms the nucleus in understanding, planning, designing, development, operation and maintenance of road infrastructure. Implementing agencies must therefore ensure that sufficient and appropriate data is collected from time to time which helps in assessing the current and future transport infrastructure needs, aimed at meeting the prevailing traffic flow, future traffic growth without considerable deterioration in the quality of service.

Primarily, traffic census is a valuable source of database for various highway planning activities such as re-classification of corridors, allocation of budgets for road maintenance and road strengthen/widening. In addition to this, traffic census also aids in understanding the demand for planning of capacity enhancements, efficiency improvements, safety improvements, multi-modal infrastructure and road user facilities and national road transport statistics and research. Furthermore, traffic census also provides data and information that aids in understanding environmental patterns such as air pollution and noise pollution trends, emission trends and dispersion estimates.

Hence, traffic census shall be mandatory exercise for all the highway departments.

3. SCOPE

This code shall act as a guiding document for conducting traffic census across all non-urban roads. This code shall also aid in understanding various approaches, systems/technologies available for data collection, data validation, data storage and analysis. Adaptation of the process shall ensure uniformity of datasets, seamless integration of data across locations and institutions and quick retrieval/access.

The repetition of census operations, on the scale recommended here, should normally be limited to important trunk routes like the National Highways, State Highways and Major District Roads.

This guideline is prepared/updated with the main aim to provide basic information, concept and principles with respect to traffic data collection, validation, storage and analysis. This guideline, therefore, is only intended to provide guidance in respect of data collection and analysis, and allows for variation in the methodologies adopted by different users, planners, developers, funding authorities, etc.

This code includes guidelines for traffic census to be undertaken along non-urban roads for,

a) choice of methods for Traffic Census
b) selection of locations, period and frequency of surveys,
c) conduct of census using both manual and automatic counters,
d) format and accuracy of data collection
e) data validation, storage and retrieval

4. METHODS OF TRAFFIC CENSUS

Purpose of traffic census determines the magnitude of traffic data required to be collected, which in turn will determine its quality and type of vehicle classification to be adopted. Traffic counting is undertaken in two different methods i.e. manual counts and automatic counts. There is no distinct difference between the two methods however, the economic use or selection of an appropriate method of traffic counting is a function of the level of traffic flow and the required data quality. Manual Counts could be employed at stations where the observed traffic flow is low (e.g. village roads and other district roads) and Automated Counts could be employed at stations where moderate to heavy traffic flow is observed (e.g. National and State Highways). Though the data processing time for automatic counts is very low, in certain cases this system is found be expensive when compared to the manual counts method. One of the major drawbacks of the manual method is the data accuracy and requirement of continuous supervision at field.

4.1 Manual Counts

Manual count method of collecting traffic flow data involves assigning a person to record traffic by type and time at a location as it passes. This was commonly adopted method of data collection till recently.

Traffic counting teams are selected, trained and set up to carry out counting at the various locations along the road sections at set interval. The duration of the count is determined prior to commencement of traffic counting and it is dictated by the end use of data. The teams are managed and supervised by the technical staff to ensure efficient and proper collection of data.

For manual counts, a day shall be divided into three shifts of 8 hours each. Counting staff are allocated along with supervisor for each shift. Number of staff depends on the density of traffic and types of vehicle class to be recorded. The traffic census should be recorded for every 15-minute interval separately for each direction of traffic. The survey formats should be different for goods vehicles and passenger vehicles. It is recommended that the enumerator use the tally marks system for recording purpose.

Extreme care should be taken while enlisting the enumerators. Enumerators should be literate with minimum matriculation level qualification and it is mandatory for the technical staff to train the enumerators about the process of traffic census and its methodology. It is also the responsibility of the supervisor to ensure the census format is properly filled with all the relevant details. Census Formats are provided in **Annexure-1.**

4.2 Automatic Counts

Advancements in detection/sensor technologies have found their application in traffic counting and classification along highways. They are more accurate in detection of vehicular presence i.e. counting but suffers from high accuracy requirements say above 95% in the vehicle classification depending on the number of vehicle classes to be counted. Nevertheless, the automatic counting methods are gaining popularity due to the advancements in the counting cum classification technology and also require less supervision at the field. The deployment of sensors is either on the surface or above or to the side of the roadway. Pavement based traffic detection currently relatively inexpensive compared to others. Some of the widely used instruments were pneumatic tubes and inductive loops but suffers from the desired accuracy in both counts and classifications. Other automatic counting methods gaining popularity are based on infrared or laser technology-based vehicle profiling systems, micro-millimeter wave Radar detectors and video camera. If their economics can be improved, automatic counting methods can be a better alternative owing to their high reliability and less dependence on humans especially for the highway traffic census where continuous availability of good personnel for conducting such census is challenging.

Brief on each of these technologies is presented below:

4.2.1 *Pneumatic Tubes*

These are tubes placed on the top of road surfaces at locations where traffic counting is required. As vehicles pass over the tube, the resulting compression sends a burst of air to an air switch. Air switches can provide accurate axle counts even when compressions occur more than 30 m from the traffic counter. Presently, this system is highly recommended only for vehicle counting as the classification accuracy is observed to be of low especially in dense mixed traffic conditions. Care should be exercised in placing and operating the system, to ensure its efficient operation and minimize any potential error in the data.

4.2.2 *Inductive Loops*

Inductive loop detector consists of embedded turned wire, it includes an oscillator, and a cable, which allows signals to pass from the loop to the traffic counting device. Inductive loops are cheap, almost maintenance-free and are currently the most widely used equipment for vehicle counting and detection. This system is also used for vehicle count and classification based on number of axles.

4.2.3 *Infrared/Laser based Vehicle Profilers*

All the above listed methods suffer from classification accuracies under different situations like lifted axle vehicles, vehicles not following lane discipline and little gap between vehicles. The Infra-Red or laser-based profilers are an automatic counter and classification machine which uses non-intrusive light technology. This fully automatic portable machine creates a digital profile of vehicles as they pass through the sensors. The algorithm built into the on-site processor matches the profile with pre-defined profiles of standard vehicle types stored in the library and classifies the vehicle type. Vehicle profiles which do not match to existing library shall be stored separately and used to train the algorithm which further enhances the accuracy of the system.

4.2.4 *Video based Classified Traffic Counts*

In order to get desired accuracy in both count and classification, video-based traffic census method is being currently used widely in both urban and non-urban scenarios. In this system, the traffic is recorded for the entire duration of the survey in video format. In the absence of an accurate automated system for counting and classifying, this recorded data should be then brought back to the data processing center and played back for trained enumerators to count and classify as done in manual count method.

4.3 Choice of Census Method

It is highly recommended to adopt the traffic counts using automatic methods or video based manual counts for all the locations. The type of automatic counting methodology depends on the survey form and may also on the environment. For temporary census locations, census may be conducted using manual methods where traffic is low. However, if the same is conducted for evaluating the feasibility of the Project or preparing Detailed Project Report or Design purpose, manual method of counts shall be combined with video recording for at least 2 days in a period of 7 days for validation.

In case of permanent census locations, it is recommended to adopt appropriate automatic counting method or at least use of video recording and processing of data in the back-office manually.

5. VEHICLE CLASS

Census primarily involves counting and classification of vehicles plying along section of highway into different classes for a given period. Vehicle class segmentation is driven by the purpose of census. Primarily the vehicles are divided into passenger cars, public transport vehicles (Buses), goods vehicles and non-motorized vehicles. Pavement designers need to understand the detailed classes of heavy vehicles based on number of axles i.e. 2-Axle, 3-Axle or Multi-Axle vehicles for pavement design. Safety Auditors are mainly concerned about speed of vehicles i.e. slow moving and fast-moving vehicles. In case of agencies undertaking census for studying the financial feasibility of projects, their interest apart from toll class will also be in knowing the type of vehicles that are exempt from toll such as Government Vehicles, Ambulance, Fire, Funeral etc. Also, as the adoption of Electric Vehicles (EV) is gaining momentum as part of the sustainable and clean mobility agenda it is imperative to count the electric vehicles as a separate class to understand the EV penetration.

Therefore, in order to address the variety of needs for classification of various stakeholders and in order to improve the accuracy of count and reliability of forecasting a more elaborative vehicle classes are recommended. Also, it is important to understand that automatic method poses constraints in classification of certain class of vehicles which would need a visual identification such as toll exempt vehicles, electric vehicles etc. Hence it is recommended that in case of automatic counting method adopted in such studies which require these classifications based on visual identification, video recording or manual census may be undertaken for a sample period i.e. 2 days every 7-day period.

Primarily classification of vehicles is based on what they are moving i.e. passenger and goods. Following table summarizes the vehicle classes to be adopted during census.

Class	Vehicle Class	Vehicle Group (Optional Class)
1	2-Wheeler	
2	3-Wheeler (Auto)	
3	Car/Van/Jeep	Pvt./Taxi/Govt./Defense
4	Shared Auto (4-Wheeler) (Commercial Passenger vehicle)	
5	Buses 2-Axle	Govt./Private/Institutional
6	Buses 3-Axle	Govt./Private/Institutional
7	Mini-Buses	
8	Ambulance / Fire / Funeral	
9	2-Axle Trucks	Private/Govt.
10	3-Axle Trucks (Rigid)	Private/Govt.
11	4-Axle Trucks (Rigid)	Private/Govt.
12	5-Axle Trucks (Rigid)	Private/Govt.
13	5+Axle Trucks (Rigid)	Private/Govt.
14	3-Axle Trucks (Trailer)	Private/Govt.
15	4-Axle Trucks (Trailer)	Private/Govt.
16	5-Axle Trucks (Trailer)	Private/Govt.
17	5+Axle Trucks (Trailer)	Private/Govt.
18	HCM/EME	Private/Govt.
19	LCV (4-Tyre)	Private/Govt.
20	LCV (6-Tyre)	Private/Govt.
21	LCV (Type-3) e.g. Carrier Auto	Private/Govt.
22	Mini LCV	Private/Govt.
23	Tractor	
24	Tractor Trailer	
25	Cycle/Bicycle	
26	Hand Drawn/Animal Drawn Cart	

However, additional categorization of the above classes would be required based on the purpose of the study for which, below three (3) categories are recommended.

A) Motorized Vs. Non-motorized

B) Tolled Vs. Toll Exempted and

C) Electric (EV) Vs. Non-Electric

6. CENSUS LOCATIONS

6.1 Review of Existing Census Locations

The highway agency or authority shall periodically review the existing census locations once every two years to identify any aberrations that would influence and impact the traffic census operation such as changes in the land use, development of new transport corridors, safety considerations etc. Any census locations which are likely to be influenced by any local trends such as urban areas, villages, transport hubs etc., should be shifted away from the influence area. Similarly, the time of census shall also be amended to avoid influence of local/regional festivals, planned or unplanned social, political, climate related events which could impact the traffic patterns/trends.

6.2 Type of Census Locations

Based on the purpose, count locations can be categorized into two types i.e. Permanent locations and Temporary locations. These locations should be identified by the respective road authorities based on the set criteria as explained below:

- **Permanent Count Locations** - Major Industrial Nodes, regional corridors connecting major cities, production and consumption centers, transportation hubs such as seaports, airports, railway terminals, logistic hubs etc.
- **Temporary Count Locations** – Corridors connecting other district centers, potential future development regions etc.

In case of permanent count locations, it is recommended to set-up automatic counting systems based on either inductive loops or infrared/laser-based profiler systems or video camera-based systems to ensure quality, accurate and continuous collection of data.

6.3 Choice of Location

For choice of location for census, a detailed map study shall be undertaken, and the road shall be divided into homogeneous sections with uniform traffic characteristics. Road section where the census shall be undertaken shall be 500 m straight section before and after the count location with no access road from the side and no habitation along the section causing direct access to the road and must be at least 100 m away from junctions; Shall have an uninterrupted traffic flow. Section to have very little pedestrian or animal traffic and meets all safety requirements. In case of census is undertaken for Project Feasibility or Detailed Project Report, the location shall be near the proposed toll plaza location.

In case Manual counts are adopted, the site shall have provisions for safely accommodating the counting staff and illumination during night. Adequate temporary enclosed facility with seating and table arrangements to be set-up for counting staff.

In case of automatic counting method is adopted, location must be determined keeping in view the availability of space for safe installation of equipment and operation. Especially if video-based system is used, the location shall ensure proper recoding of data with proper capture of vehicle image which shall enable accurate count and classification.

6.4 Number of Locations

Purpose of the census shall determine the number of locations. The entire highway section shall be divided into homogeneous section as defined in section 6.3 and at least one location shall be adopted per homogeneous section.

In case the census is undertaken for a project feasibility or preparation of detailed project report, number of locations can be decided based on the length of a project. Based on the project of length the minimum number of census location shall be as given below:

Up to 50 Km. – 2 Nos.

Up to 100 Km. – 3 Nos.

(Additional Locations may be decided as per the homogeneity of the sections, land use and major intersections along the project highway and road safety criteria i.e. accident spots).

7. FREQUENCY AND DURATION OF CENSUS

7.1 Traffic Counts

7.1.1 *Permanent Count Locations*

Traffic counts should be carried out for entire 365 days, and for 24 hrs. As advanced technology is available at affordable prices, the traffic counts could be carried out using automated traffic counters and classifiers.

7.1.2 *Temporary Count Locations*

In case of census undertaken for traffic trends monitoring along highway sections, they should be carried once in every quarter (4 Times) per year to study the variations in traffic pattern due to seasons/business/economic cycles.

In case of Project Feasibility or DPR, counts at the census locations shall be undertaken twice, once during Feasibility Stage and 2nd time before submission of Draft DPR. In case of Detailed Design stage, one-time study during designing shall be sufficient.

Each time a census is undertaken, it shall be done for 7 continuous days for 24 hrs. The survey should be carried out in both directions for all vehicle categories as mentioned in the **Annexure-1**

While carrying out census, it shall be ensured that the counting period should be free of events, public holidays, planned events or exceptional weather conditions etc.,

8. SITE SAFETY DURING CENSUS

Traffic safety especially during manual method of census is mandatory and shall be the responsibility of the agency undertaking the surveys. It shall be ensured that appropriate safety measures are in place before a census is commenced at site.

Location of the counting sites should be chosen with full consideration to traffic safety of both staff in case of manual census and for installation, operation and maintenance of equipment in case of automatic census.

Whenever manual traffic surveys are in progress, proper signage shall be in place for safety of enumerators. Census sites shall be properly numbered in case of permanent count stations. The counting site number is linked to the existing Road Reference System. It is also recommended that the equipment enclosures installed on the roadside shall also be marked with an identity number of the site.

The site should be inspected for safe use by supervisor who should also ensure that no signage is removed from site until the survey is completed. Staff shall be wearing reflective jackets at all times on site for ensuring their safety.

Permissions from respective authorities shall be taken in advance for conduct of census.

9. DATA QUALITY ASSURANCE AND CONTROL

9.1 Manual Counts

The manual method of Traffic Census could be conducted in-house or could be sourced to a qualified agency. In either case, it must be ensured that the enumerators selected for the census meet the minimum requirement criteria mentioned earlier. In cases where the Census activity is sourced to a qualified agency it is the responsibility of the highway department/development agency to ensure that the quality of the data meets the data quality and assurances as defined.

Field enumerators appointed for traffic surveys should have at least a minimum of 10th Standard education to enable them to be undertake the exercise with reasonable degree of accuracy. All enumerators upon selection should undergo a training program before being assigned to work alone in the field. This training is aimed at familiarizing them with vehicle classification process, counting technique and the administrative process. Trials shall be conducted on field to check the understanding of the enumerators and correct the same in case of mistakes if any.

While majority of the enumerators may be based in the field collecting raw data, some should be stationed at office to transform the raw data into analysis forms, either for subsequent storage or transfer into the computer system for further analysis. Office staff should undergo a thorough computer software training such as data processing, spreadsheets, appropriate traffic data analysis system(s) and any other related systems.

Real time cross checks must be conducted by experienced technical personnel at least twice a day. Supervisors should ensure that the basic information in the form is duly filled in by the enumerators. Once completed the survey supervisor must sign on each of the forms and provide feedback on the performance of the enumerators from time to time.

Attempts should, therefore, be made in ensuring that there is adequate planning, training of enumerators and a clear understanding of the exercise to be performed.

9.2 Automatic Counts

Similarly, Automatic Traffic census could be conducted in-house or could be sourced to a qualified agency. The authenticity of the equipment must be ensured by conducting a mock census for short duration before the start of the actual census. Appropriate measures for uninterrupted visibility and recording must be taken. If the census is sourced, it shall be the responsibility of the highway department/development authority to ensure that the data being collected adheres to the data quality and control measures.

It is recommended that, the staff especially supervisors deployed at site shall be at least diploma holders in technical education preferably electronics and shall be trained in the operation and maintenance of the entire system including hardware and software. They shall also be trained for basic troubleshooting of the device in case of any issues and provided with a helpdesk support for seeking technical assistance in resolving the issue.

While adopting automatic counting system, one needs to ensure the following for continuous (prevention of data loss) and quality data.

a) Counting equipment shall be installed at a location so that the same does not become obstruction/distraction to the traffic;

b) Counting equipment shall be properly enclosed in a cabinet and protected from Vandalism.

c) Adequate power back-up system is available at site

d) Equipment calibration shall be done before start of every census in line with the process stipulated by the manufacturer and the same shall be checked and verified by the officer in charge from authority.

e) System to ensure loss of data even if the unit is shut due to loss of power.

f) Adequate data storage is available in the system

g) In case of video-based system is deployed, adequate lighting shall be made available at the site to ensure proper recording of data to facilitate count and classify the vehicles

Engineers shall visit the installation site at regular intervals and check the performance of the system.

9.3 Consistency and Accuracy of Data

To measure the quality of data during collection, following metrics shall be computed and monitored.

Intra-Day Variations – Variation in the hourly traffic by specific class shall not be more than 35% unless it is observed on more than 3 days

Inter-Day Variations – Variations between Average Daily Traffic for a specific class shall not be more than 25%

In case of a variation observed over the above-mentioned limit, the data has to be rechecked and proper justification shall be provided as part of the traffic report.

In addition to the above, where census is undertaken using automatic counting method, traffic data accuracy shall be computed for count and vehicle classification by conducting manual counts on sample basis for one hour every day on random time periods. Automatic counts for the sample count period shall be compared with that of sample counts for each class of vehicle and accuracy shall be measured. Such accuracy shall be within the permissible limits as prescribed below:

Counting Accuracy shall be >98%

Vehicle Classification Accuracy shall be >95%

As, the current accuracy levels of the automated systems is observed to be below 95%, a mix of both highly accurate methods of automated counts can be recommended until the accuracy of such systems are above the acceptable levels i.e. 95%.

9.4 Re-conduct of Census

Traffic census periods should not generally encompass abnormal conditions of traffic like fairs, exhibitions, political rallies and pandemics etc. In such cases, the count in the area should be postponed till normal conditions prevail.

In case of any unplanned event takes place during the census, the survey shall be abandoned and re-conducted once the situation becomes normal.

The Highway department/development agency may re-conduct the Traffic Survey if data quality is not matching the minimum acceptable levels/standards.

10. COMPILATION OF DATA

10.1 Data Processing

In case of Manual Census, survey data shall be summarized for hourly data by location as per the format attached in **Annexure-2**. The sheet shall include geographic location, direction of the survey, date and time in common time stamp, weather condition etc. and vehicle classifications. Also, the field datasheet shall include the signature of the enumerator, supervisor and authorized person from the agency responsible for the traffic census.

Manual data sheets shall be transformed to a computer data file system using standard application for further processing and storage. Quality checks shall be undertaken to ensure that the data is properly entered in to computer and verified. In case of Automatic Census, the data is processed automatically and shall be available for storage.

In either case, following information shall be stored within each file:

a) Agency Name
b) Method of Counting – Manual/Automatic
c) If Automatic, Technology adopted, Make/Model of Equipment used, Last Calibration Date and settings (if any)
d) Location Code
e) Location Name
f) Vehicle Data by Count and Class by Date and Time (15 Min. interval) as per the class and category defined above. Format provided in **Annexure-2.**
g) Name of Officer – Monitoring the Census
h) Name of Officer – Quality Check Conducted

10.2 Data from Existing Sources

Currently Traffic census is undertaken by many agencies across the country along all types of non-urban roads. It is recommended that these agencies compile the data and store the same in a standard format as prescribed in this document (**Annexure-3**) to enable sharing across the agencies.

10.3 Data Transmission

In case of manual data collection process, the physical formats and data in computer file format shall be submitted to respective Authorities within 30 days from completion of the survey.

In case of automated data collection process, processed data should be shared to respective authorities in the prescribed format within 7 days of completion of survey.

In case of deployment of a mix of manual and automated collection process, depending on the number of survey stations, the processed data should be shared in the prescribed formats on or before 30 days from the completion of survey.

10.4 Data Validation

Primary data validation should be done by respective authorities for ensuring:

a) Completeness of Data i.e. location, direction, hourly data counts by vehicle class,
b) Compliance as per data format and availability in prescribed computer file format
c) Quality of Data i.e. consistency and accuracy as prescribed

10.5 Data Storage, Back-up and Access

Multiple choices of data storage are available. However, it is recommended that the road agencies shall set-up a secured central server in their premises or use a server storage hosted on a cloud to store the data and provide access to authorized personnel only.

Also, it shall be ensured that no one shall have permissions to edit data, user access shall be provided only to view and use the data or download onto their local computers for further analysis.

10.6 Data Analytics

Value of data can be enhanced, and insights can be derived through integration and cross tabulation of data across road sections and other data types within same section of road such as speeds, accidents, vehicle payloads etc. that would assist in the improvement of the roads or corridors. The Road agencies or authorities are recommended to create and maintain an up-to-date data analytics platform for the stored data. This analytical platform could be open source or proprietary.

10.7 Geo referenced Map with Traffic Census

Road agency or authority preferably must create GIS based road network cum traffic census for the entire road network under its control. It shall include latitude, longitude of survey location, traffic details, time stamp, weather condition, landmark etc.

FIELD DATA SHEET – TRAFFIC COUNTS

Classified Traffic Volume Count
PASSENGER TRAFFIC

Location:	Direction:	Latitude:	Longitude:	Weather Condition:	Date: DD/MM/YYYY	Enumerator:

Time*	Passenger Vehicles									Toll Exempted Traffic		Non-Motorized		
(15 mins)	2 Wheelers	Auto	Cars/Vans/ Jeeps (Private)	Cars/Vans/ Jeeps (Taxi)	Share Autos (4 Wheelers)	Buses (State)	Buses (Private)		Institution-al Buses	Mini Buses	Govt. Cars/ Jeep/Vans	Army/Govt Ve-hicles/ Ambulance	Cycle	Animal hand drawn
							2-Axle	3-Axle						
:00 to :15														
TOTAL														
:15 to :30														
TOTAL														
:30 to :45														
TOTAL														
:45 to :00														
TOTAL														

Note: * Strictly follow 24hour Clock (Example: 13:15 to 13:30)

SIGNATURE OF SUPERVISOR WITH DATE

Classified Traffic Volume Count

GOODS TRAFFIC

Location:	Direction:	Latitude :	Longitude:	Weather Condition:	Date: DD/MM/YYYY	Enumerator:

Time*	Goods Vehicles															Toll Exempted	
		Rigid Trucks				Trailer Trucks					LCVs							
	2 - Axle Trucks	3 - Axle Trucks	Type 1 (4Axles)	Type 2 (5Axles)	Type 3 (5Axles +)	3 - Axle Trucks	Type 1 (4Axles)	Type 2 (5Axles)	Type 3 (5Axles +)	HCM/ EME	Type 1 (4 Tyre)	Type 2 (6 Tyre)	Type 3 (Tata Ace)	Type 4 (Mini LCV)	Goods Auto	Tractor & Trailer	Govt Trucks	Others
:00 to :15																		
TOTAL																		
:15 to :30																		
TOTAL																		
:30 to :45																		
TOTAL																		
:45 to :00																		
TOTAL																		

Note: HCM = Heavy Construction Machinery, EME = Earth Moving Equipment

DAILY AND WEEKLY DATA SUMMARIES

Classified Traffic Volume Count - Daily Summary

Location:	Longitude:	Latitude:	Weather Condition:	Date: DD/MM/YYYY	Signature of the Supervisor

Time*	Passenger Vehicles									Toll Exempted Traffic		Non-Motorized		Goods Vehicles															Toll Exempted	
	2 Wheeler	Auto	Cars/ Vans/ Jeeps (Private)	Cars/ Vans/ Jeeps (Taxi)	Share Autos (4 Wheelers)	Buses (State)	Buses (Private)		Institutional Buses	Mini Buses	Govt. Cars/ Jeep/ Vans	Army/ Govt Vehicles/ Ambulance	Cycle	Animal hand drawn	2 - Axle Trucks	Rigid Trucks				Trailer Trucks				HCM/ EME	LCVs				Goods Auto	Tractor & Trailer	Govt Trucks	Others
							2-Axle	3-Axle								3 - Axle Trucks	Type 1 (4Axles)	Type 2 (5Axles)	Type 3 (5Axles +)	3 - Axle Trucks	Type 1 (4Axles)	Type 2 (5Axles)	Type 3 (5Axles		Type 1 (4 Tyre)	Type 2 (6 Tyre)	Type 3 (Tata Ace)	Type 4 (Mini LCV)				
8:00 - 09:00																														
9:00 - 10:00																														
0:00 - 11:00																														
1:00 - 12:00																														
2:00 - 13:00																														
3:00 - 14:00																														
4:00 - 15:00																														
5:00 - 1600																														
6:00 - 17:00																														
7:00 - 18:00																														
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1:00 - 02:00																														
2:00 - 03:00																														
3:00 - 04:00																														
4:00 - 05:00																														
5:00 - 06:00																														
6:00 - 07:00																														
7:00 - 08:00																														
Daily Total																														

TRAFFIC COMPILATION AT AGENCY (HQ) BY PLANNING TEAM

Geo Base Data Upload Format			
Highway Authority:			**Section Name:**
Survey Authority:			**Latitude:**
Highway Number:			**Longitude:**
Survey Duration:		**From:**	**To:**

Vehicle Category (1-4)	Vehicle Class (1-25)	Traffic Summary							ADT	AADT
		Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7		
Total										

Signature of Authority/Supervisor

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(The Official amendments to this document would be published by the IRC in its periodical, 'Indian Highways' which shall be considered as effective and as part of the Code/Guidelines/Manual, etc. from the date specified therein)

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